Department of Toxic Substances Control

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CALIFORNIA ENVIRONMENTAL QUALITY ACT

SPECIAL INITIAL STUDY

The Department of Toxic Substances Control (DTSC) has completed the following Special Initial Study for this project in accordance with the California Environmental Quality Act (§ 21000 et seq., California Public Resources Code) and implementing Guidelines (§15000 et seq., Title 14, California Code of Regulations). This Special Initial Study has also been used to satisfy the requirements of 711.4, Fish and Game Code and 753.5, Title 14, Code of California Regulations relating to filing of environmental fees.

I. PROJECT INFORMATION

Project Name:

Non-Time Critical Removal Action at Installation Restoration (IR) Site 73, Water Tower Area, Naval Weapons Station (NAVWPNSTA) Seal Beach, California.

Site Location:

NAVWPNSTA Seal Beach is located at 800 Seal Beach Boulevard, Seal Beach, California, and consists of approximately 5,000 acres of land along the Pacific Ocean within the city of Seal Beach. NAVWPNSTA Seal Beach is bordered on the southwest by Anaheim Bay, on the north by Interstate Highway 405 (San Diego Freeway), on the east by Bolsa Chica Road, on the west by Seal Beach Boulevard, and on the southeast by an Orange County Flood Control Channel (as shown on Figure 1). IR Site 73 consists of the area under and surrounding the station's water tower, located east of Seal Beach Boulevard, south of the Main Gate, and west of Building 206 (as shown on Figure 2).

Contact Person/ Address/ Phone Number:

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Project Description:

The Department of the Navy (DON) is proposing to excavate, remove, and dispose of approximately 400 bank cubic yards (bcy) of lead-impacted soil from IR Site 73, Water Tower Area, NAVWPNSTA Seal Beach. Following a program of systematic soil testing, it has been determined that lead levels are elevated to a level that warrants remediation in four areas of IRP Site 73. The removal areas include a 70- by 60-foot block surrounding the water tower, a 30- by 40-foot area immediately southeast of the water tower, and two areas, measuring 20 by 50 feet and 20 by 30 feet immediately adjacent to the perimeter fence. Soil will be removed in most areas to a depth of 2 feet, but in the southeast corner of the largest

area, under the water tower, excavation may exceed 3 feet. The project is expected to begin in October of 2002 and last approximately 3 months.

The investigation area around IR Site 73 is a rectangular area approximately 6 acres under and surrounding the water tower. This area is predominantly flat with a few mounded areas in the immediate vicinity of the water tower. The site is a grassy area, landscaped with some scattered trees and shrubs. The site falls within a known archaeological site (CA-ORA-322/1,118) and, in 1997, an archaeological investigation documented by Ogden Environmental and Energy Services Co., Inc., reconfirmed the significance of the site's cultural resources (Ogden 1997).

CULTURAL RESOURCES INVESTIGATION

The first phase of excavation will be data recovery, including manual excavation, conducted by a trained archaeologist, to recover, process, and catalog any potential cultural resources. The data recovery plan has been developed and is located in Appendix C of the draft workplan for the site. Prior to starting field activities, the DON will consult with the California Office of Historic Preservation. Excavation of the remaining soil would be performed using standard construction equipment (e.g., backhoes and front-end loaders). All excavation activities will be conducted under the observation of an archaeological monitor and a Native American Monitor.

The Navy will sample 1 percent of the archaeological deposit that will be removed during IRP Site 73 remediation. Artifacts and other cultural materials removed during that process will be subjected to detailed analyses, which includes faunal, paleoethnobotanical, palynological, lithic, sedimentological, and radiocarbon. A technical report will be completed describing the conduct and results of the effort. Upon acceptance by the DON of the final archaeological report, all artifacts and records from the project, cataloged and in containers with labels meeting repository specifications, will be turned over to a federally approved repository for curation.

Cultural resources investigation will be a two-stage process. The first stage will be a systematic augering program to locate areas that can best provide information on the site in the following areas: chronology, subsistence and settlement, intra-site patterning, trade and raw material procurement, and environmental change. The second stage will be excavation of a sample from those areas that auger testing identifies as most promising.

Auger Testing

The midden at Archaeological Site CA-Ora-322/1118 is unevenly distributed. In some areas, Soil 1, which may be the only primary midden deposit in the site, is only 4 centimeters thick, in others 60 centimeters; some excavation units from the area were nearly devoid of artifacts, debitage, and shell and bone, while others produced large quantities. The DON wishes to focus its attention on the most productive midden areas, so the auger-testing program has been devised to locate them. Auger holes 10 centimeters in diameter will be excavated in 20 centimeters lifts to a depth of up to 1 meter on a 3-meter interval grid placed over each of the four areas designated for soil removal. There will be 104 of such auger holes altogether with a total volume of approximately 1 cubic meter.

- ***Collection of Artifacts.*** Matrix removed from these holes will be screened through 1/8-inch mesh for midden components, which will be tallied in the field and saved for later analysis. Finds will be bagged together in clear, ziplock, polyurethane bags and labeled according to sample type, site, auger unit, level, date, and excavator.

- ***Auger Forms.*** Pit stratigraphy and tallies of midden material will be recorded on auger sample forms and the data transferred to maps displaying the distribution of each midden component. The results of this work will guide the second phase of work.

Data Recovery Excavation

Soil removal will directly affect 750 square meters of area. One percent of this is 7.5 square meters, rounded up to 8. Based on the results of Clevenger and Crawford's (1997) excavations, we assume the depth of each test to be 1 meter, for a total of 8 cubic meters of matrix to be excavated. Excavations will be conducted in 1-meter square horizontal units, situated singly or in contiguous groups. The fill material that everywhere lies directly beneath the surface will be removed and discarded before scientific excavation begins. Excavation will be in 10 centimeters levels within the site's natural strata. Excavation will proceed by trowel and dustpan in dense midden material and by shovel where cultural materials are sparse.

- ***Collection of Artifacts.*** Matrix will be simultaneously screened through 1/2- and 1/8-inch wire mesh, with the 1/2-inch mesh nested within the 1/8-inch screen. Shell, lithics, ground stone, bone fragments and fire broken rock will be sorted from the 1/2-inch screen in the field and saved; the residue that remains in the 1/8-inch mesh will be double-bagged, labeled by sample type, site, excavation unit and level, date and excavator, and transported to the laboratory for water screening. From the water screens, we will save all lithics, bone, otoliths, modified shell, the hinges of bivalve mollusks, and the apices of gastropod shells. Each material type from dry or water screening will be bagged separately in clear, ziplock, polyurethane bags and labeled by material, site, unit, level, date, and excavator.
- ***Unit Level Records.*** A unit level form that includes a sketch of the surface at the base of the level, tallies of recovered items, and a description of sediments and other items of interest will be filed out for each 10 centimeters level of each 1 by 1 meter square. A digital photograph will be taken of the unit surface at the completion of each level.
- ***Features.*** The types of features to be excavated include hearths, house floors, cache pits, artifact concentrations, and so forth. The excavation and recordation of these features will follow industry standards, including documenting and recording data, such as provenience, description, depth, and collecting soil and charcoal samples. Each feature encountered in a site shall be given a feature designation sequential for this excavation project. Feature forms will also be used for recording data, observations, and for mapping each feature. Photographs will be taken during the feature excavation process and once exposure of the feature is complete.
- ***Column Samples.*** A 10- by 10-centimeter column sample will be taken from each unit. Each 1,000 cubic centimeters of matrix will be placed in a clear, ziplock, polyethylene bag marked with the sample type, site number, unit number, level, date, and contents. The samples will be transported to the laboratory for processing. A subset of these samples will be evaluated later to determine if they produce any charcoal that can be used for macrobotanical analysis.
- ***Radiocarbon Samples.*** Samples of material suitable for radiocarbon dating will be collected from features or other in situ contexts. Sample materials will be collected with clean, metal tools and placed in clear, ziplock, polyethylene bags labeled by sample type, site, unit, depth, date, and excavator.
- ***Profiles.*** Sidewall profiles will be completed for at least one representative sidewall for each unit and include observed stratigraphy, any disturbance, and soil descriptions and Munsell soil color codes for each stratum. Two hundred cubic centimeter (loose) samples of each stratigraphic layer recognized in the site will be taken for later analysis. Samples taken in series from the same sidewall will be taken from the bottom up and the trowel cleaned between samples to avoid contaminating lower samples with sediment from shallower strata. All samples will be placed in

clear, ziplock, polyethylene bags labeled with sample type, site, unit, depth, date, and excavator. These samples will be used later in splits for sedimentological and palynological analyses.

- ***Human Remains.*** At all times, there will be at least one staff member in the field who is capable if distinguishing human bones from remains of other vertebrates. The field staff will also keep at least one human osteology text available during all earth disturbing activities. If human remains are encountered, work in the excavation unit will immediately cease and the cultural resources officer for NAVWPNSTA Seal Beach will be contacted. That individual will call the county coroner and initiate NAGPRA procedures for disposition of inadvertent discoveries. Work will not resume until an agreement on removal and treatment of the remains has been reached.

SOIL REMEDIATION

Based on the refined ecological risk assessment the recommended cleanup goal for lead in soil is 317 mg/kg. This value is considered protective of wildlife that may be present at the site, such as small birds and mammals, and protective of soil invertebrates and microbes that represent a source of food for the small birds and mammals.

Contaminated soil would be excavated to 1.5 feet below ground surface (bgs) in most cases and would continue to a depth of approximately 3 feet bgs in areas where necessary. The aboveground portion of the water tower is schedule for removal prior to the implementation of this removal action, but the footing would not be removed at that time. During the field activities the top 1.5 to 3 feet of the water tower will have to be removed, using a jackhammer or other appropriate method to match the depth of the excavation. It is not anticipated that excavation activities would be within a close proximity to Building 206, if this should change provisions would be made to ensure that the building's foundation is not compromised.

Although it is not expected to be necessary, dust monitoring would be implemented if required. Excavated soil would be stockpiled on and covered with plastic (minimum 20-millimeter thickness) until it can be sampled and classified for appropriate disposal. Also the trucks hauling the contaminated soil will either be covered with tarps or have their load height limited as necessary.

Potential exposure and protection procedures for workers engaged in construction activities would be addressed in the Site-Specific Safety Health Plan. The Health and Safety Plan (HSP) describes the controls and procedures to be implemented that will minimize the incidents, injury, and health risks associated with the remedial activities conducted at the Site. The HSP will be prepared according to the requirements of 29 CFR 1910.120, and CCR Title 8 General Industrial Safety Order (GISO) 5192 for work at hazardous waste sites. The HSP will contain, at a minimum, the following elements:

- A hazard evaluation;
- Names of key personnel and the site safety coordinator;
- A statement that personnel have completed training required by 29CFR 1910.120 and CCR Title GISO 5192;
- Medical surveillance requirements and personal protective equipment to be used by site personnel;
- The types and frequency of personal and area air monitoring, instrumentation and sampling techniques for monitoring of health and safety;
- Site control measures, including the designation of work zones (e.g., exclusion, contamination-reduction and support zones) and safe work procedures for work near structures or topographic

breaks, slopes, wall, etc;

- Management of wastes and decontamination procedures for personnel and equipment;
- Noise and dust control procedures and action levels;
- Site transportation procedures;
- Contingency plans including telephone numbers and contact names; and
- Location and routes to the nearest emergency and non-emergency medical care facilities.

During excavation activities, measures listed in the HSP would be taken to reduce fugitive dust emissions, if encountered, and the associated impacts on workers. All workers within the work zone would wear appropriate safety equipment and take appropriate safety measures.

Heavy equipment would conform to Occupational Safety and Health Administration (OSHA) specifications. Excavation areas, soil stockpile areas, and other work areas would be properly delineated to limit access to authorized personnel. Only authorized and trained personnel would operate the heavy equipment.

Confirmation sampling would be performed to establish concentrations of lead for soil remaining in place after excavation has been completed. Analytical results for confirmation sampling would be compared to the proposed cleanup goal. Based on this comparison, a decision to terminate excavation, if feasible, would be made. Additional confirmation sampling would be required if the decision were made to continue excavation.

When the results of the confirmation sample analysis indicate that the soil containing lead at the concentrations exceeding proposed cleanup goal has been removed, the excavation would be backfilled with clean fill material, compacted to original grade, and revegetated with sod. It is assumed that portions of the irrigation system will need to be repaired or replaced following the removal activities.

Project Background Discussion

Potable water is supplied to NAVWPNSTA Seal Beach by the city of Seal Beach. In the past, the potable water was stored in the water tower at IR Site 73, which contains a 103,000-gallon elevated tank. Since its construction around 1944, the external surface of the water tower has been periodically sandblasted and painted. The most recent sandblasting/painting activities took place around 1994. Those activities resulted in the release of sandblasted paint chips to the area under and surrounding the water (CH2M Hill 2000). The aboveground portion of the water tower is scheduled to be removed. This will occur prior to implementation of this removal action. Otherwise the land use at the site is not anticipated to change.

NAVWPNSTA Seal Beach and the DON have been actively engage in the IR Program since 1980. However, IR Site 73 was only recently added to the IR Program. There have been no previous removal actions or previous removal activities taken at IR Site 73. The following summarizes the results of previous investigation conducted at IR Site 73.

Analysis of surface soil samples collected by personnel of the DON in the immediate vicinity of the water tower indicated elevated lead concentration in soil. Lead was reported in samples at concentrations ranging from 224 milligrams per kilogram (mg/kg) to 3,420 mg/kg (SWDIV 1997). This warranted additional soil sampling to fully delineate the vertical and horizontal extent of contamination from paint residue.

In 2000, CH2M Hill conducted an FSI Phase II at IR Site 73. The objectives of the FSI Phase II were to determine the extent of metals and semivolatile organic compounds (SVOCs) and to screen for ecological and human-health risks. A professional archaeologist and a Native American monitor were present during sampling activities at IR Site 73 to minimize potential impacts to the known archaeological site. The sampling crew was trained in proper procedures to minimize impact during the investigation. The results and conclusions were as follows.

- Nine Metals (arsenic, cadmium, copper, lead, magnesium, mercury, nickel, selenium, and zinc) were reported at concentrations above the upper limit background values (ULBVs). Most of the metals concentrations above ULBVs were reported in surface soils samples. Observations of the concentration trends indicated that most of the metals (primarily lead, copper, and cadmium) attenuate with depth and that arsenic may be naturally occurring.

- Twenty SVOCs including 14 polynuclear aromatic hydrocarbons (PAHs) and 3 phthalates (common laboratory contaminants) were reported in soil samples. Most of the SVOCs were reported in surface soil samples.

- Based on the human-health risk screening, the risk from SVOCs is considered minimal and the risk from metals is considered acceptable.

- Based on the ecological risk screening, it was concluded that PAHs do not contribute to the risk of ecological receptors. However significant risk to terrestrial receptors exists from metals in soil. Safe ecological preliminary remediation goals (PRGs) for most receptors are exceeded by the maximum concentrations of these metals and by the 95 percent upper confidence limit (UCL) concentration of lead. Lead is the primary contributor to risk at this site.

Agencies Having Jurisdiction Over the Project/ Types of Permits Required:

The Department of the Navy, Southwest Division Naval Facilities Engineering Command (SWDIV), administers the IR Program at NAVWPNSTA Seal Beach. The California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC) provides regulatory oversight for all IR Program activities. DTSC, as the lead agency, has approval authority over the RAW for this project. The activities planned for IR Site 73 will be conducted under the Navy's IR Program, pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. §9601, et seq. As such, the Navy is exempt from all federal, state, and local administrative requirements such as permit acquisition, administrative reviews, reporting, and record-keeping that would otherwise pertain to such activities.

II. DISCRETIONARY APPROVAL ACTION BEING CONSIDERED BY DTSC

- ☐ Initial Permit Issuance
- ☐ Permit Renewal
- ☐ Permit Modification
- ☐ Closure Plan
- ☐ Regulations
- ☐ Removal Action Plan
- ☒ Removal Action Workplan
- ☐ Interim Removal
- ☐ Other (Specify)

Program/ Region Approving Project:

California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC), Office of Military Facilities – Southern California Operations

Contact Person/ Address/ Phone Number:

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III. ENVIRONMENTAL RESOURCES POTENTIALLY AFFECTED

The boxes checked below identify environmental resources, which were found in the following ENVIRONMENTAL SETTING/IMPACT ANALYSIS section to be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact".

- ❑ Aesthetics
- ❑ Agricultural Resources
- ❑ Air Quality
- ❑ Biological Resources
- ❑ Cultural Resources
- ❑ Geology And Soils
- ❑ Hazards and Hazardous Materials
- ❑ Hydrology and Water Quality
- ❑ Land Use and Planning
- ❑ Mineral Resources
- ❑ Noise
- ❑ Population and Housing
- ❑ Public Services
- ❑ Recreation
- ❑ Transportation and Traffic
- ❑ Utilities and Service Systems
- ❑ Cumulative Effects

IV. ENVIRONMENTAL IMPACT ANALYSIS

The following pages provide a brief description of the physical environmental resources that exist within the area affected by the proposed project and an analysis of whether or not those resources will be potentially impacted by the proposed project. Preparation of this section follows guidance provided in DTSC's California Environmental Quality Act Initial Study Workbook [Workbook]. A list of references used to support the following discussion and analysis are contained in Attachment A and are referenced within each section below.

Mitigation measures which are made a part of the project (e.g.: permit condition) or which are required

under a separate Mitigation Measure Monitoring or Reporting Plan which either avoid or reduce impacts to a level of insignificance are identified in the analysis within each section.

1. Aesthetics

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

IR Site 73 is located under and around the water tower on NAVWPNSTA Seal Beach next to Building 206. The site is currently a grassy area with landscaped trees and shrubs.

References: 1

Analysis of Potential Impacts:

Planned activities at the site include removal of approximately 400 bcy of lead-impacted soils, stockpiling of soils, and restoration of the site to its original state. The DON will also be removing the water tower from the site. The project will not result in the addition of new light and/or glare; and will not block any views, or obstruct any scenic vista or view open to the public.

Therefore the project will not:

a. Have a substantial adverse effect on a scenic vista.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway.

c. Substantially degrade the existing visual character or quality of the site and its surroundings.

d. Create a new source of substantial light of glare, which would adversely affect day or nighttime views in the area.

References: 1

Findings of Significance:

- ☐ Potentially Significant Impact
- ☐ Potentially Significant Unless Mitigated
- ☐ Less Than Significant Impact
- ☒ No Impact

2. Agricultural Resources

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

Although no agriculture exists on the site the area is surrounded by agricultural activities.

Analysis of Potential Impacts:

The site is not agricultural. The project is temporary and all activities will be performed on site therefore no impact is expected to the surrounding agricultural land.

Therefore the project will not:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

b. Conflict with existing zoning or agriculture use, or Williamson Act contract.

c. Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural uses.

References:

Findings of Significance:

- ☐ Potentially Significant Impact
- ☐ Potentially Significant Unless Mitigated
- ☐ Less Than Significant Impact
- ☒ No Impact

3. Air Quality

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

The climate at NAVWPNSTA Seal Beach is largely influenced by the Pacific high, which is a semi permanent high-pressure system located off the Pacific Coast that tends to migrate seasonally. During the summer, the high-pressure system moves northerly and produces persistent temperature inversions and predominantly northwest airflow. Skies remain clear, and little precipitation occurs because the high-pressure system tends to block migrating extra-tropical storms. Warm, moist tropical air from off the coast of Mexico also blows into southern California, bringing occasional thunderstorms and isolated showers that occur mainly over the mountains.

The Pacific high begins to shift southerly during the fall, and its effects are less pronounced, especially during the winter. Extra-tropical storms can move into southern California, increasing precipitation and cooling temperatures. During the winter, Santa Ana wind conditions are not uncommon. Santa Ana winds occur when high pressure builds in the Great Basin area of Utah and Nevada. The clockwise circulation around the high-pressure system produces north to northeast winds, which can persist from several hours to a few days and reach sustained speeds of up to 60 miles per hour (mph).

Seal Beach climate is classified as a marine-influenced southern California coastal region with mild winters that average 52 degrees Fahrenheit (°F) and summers that average 68°F. Air temperature extremes range from winter lows in the 30s to summer highs in the 90s. Annual precipitation averages 12.5 inches with approximately 90 percent occurring between the months of November and April. Although precipitation is low, a high humidity level is sustained owing to the proximity of the Pacific Ocean.

Prevailing winds at NAVWPNSTA Seal Beach average 3.8 mph from the west. Occasional strong, dry winds of up to 60 mph from the northeast occur in the fall, winter, and early spring due to Santa Ana conditions.

The table below shows the maximum concentration of chemical constituents found in the soil at IR Site 73, the calculated maximum concentration of each constituent in the air based on an assumed maximum dust concentration of 5 mg/m^3, and the maximum allowable concentration of each constituent permitted by OSHA, i.e., the permissible exposure limit (PEL).

Chemical Compound	Max. Conc. in Soil [1] (mg/kg)	Max. Conc. in Air [2] (mg/m^3)	Max. Allowable Conc. In Air [3] (mg/m^3)
Semivolatile Organic Compounds (SVOCs)			
4-methylphenol (p-cresol)	6.40E-01	3.20E-06	2.2E+01
Anthracene	4.20E+00	2.10E-05	2.0E-01
Benzo(a)pyrene	7.30E+00	3.65E-05	2.0E-01
bis(2-ethylhexyl)phthalate	1.00E+01	5.00E-05	5.0E-00
Chrysene	1.10E+01	5.50E-05	2.0E-01
di-n-butyl phthalate	1.10E-01	5.50E-07	5.0E-00
Phenanthrene	1.30E+01	6.50E-05	2.0E-01
Pyrene	2.40E+01	1.20E-04	2.0E-01
Metals			
Aluminum	2.6E+04	1.29E-01	5.0E-00
Arsenic	7.6E+01	3.80E-04	1.0E-02
Barium	9.7E+02	4.87E-03	5.0E-01
Beryllium	8.7E-01	4.35E-06	2.0E-03

Chemical Compound	Max. Conc. in Soil [1] (mg/kg)	Max. Conc. in Air [2] (mg/m^3)	Max. Allowable Conc. In Air [3] (mg/m^3)
Cadmium	9.1E+00	4.55E-05	5.0E-03
Chromium	8.5E+01	4.25E-04	1.0E-00
Cobalt	1.3E+01	6.50E-05	1.0E-01
Copper	9.4E+01	4.70E-04	1.0E-00
Lead	1.4E+03	6.80E-03	5.0E-02
Manganese	8.0E+03	4.01E-02	5.0E-00
Mercury	3.3E-01	1.65E-06	1.0E-01
Nickel	4.4E+01	2.20E-04	1.0E-00
Selenium	1.0E+01	5.00E-05	2.0E-01
Silver	5.4E+00	2.70E-05	1.0E-02
Thallium	2.8E+01	1.40E-04	1.0E-01
Vanadium	5.8E+01	2.90E-04	5.0E-01
Zinc	3.4E+02	1.71E-03	5.0E-00

Notes:

(1) Maximum concentrations reported in IR Site 73 soils (Focus Site Inspection Phase II Report, Table 5-14).
(2) Maximum concentrations in air based on an OSHA permissible exposure limit (PEL) for exposure to dust (based on an 8-hour shift) of 5 mg/m^3.
(3) Maximum allowable concentration permitted by OSHA (Ref. NIOSH Pocket Guide to Chemical Hazards, June 1997).
(4) E refers to exponent

References: 1, 4 and 5

Analysis of Potential Impacts:

Excavation activities may create *temporary* airborne particulates and fugitive dust, which will cease once the field activities are complete. The main potential air emissions generated by this project would be fugitive dust. The greatest amount of emissions will occur during excavation and stockpiling which is expected to last for approximately 1 to 1.5 months.

Dust emissions will be controlled by water spraying during excavation and stockpiling activities. If necessary the air will be monitored for particulates to ensure compliance with the substantive requirements of the South Coast Air Quality Management District (SCAQMD) Rules 401(b)(1)(A), and 403. The air will be monitored for dust upwind and downwind of the site to determine the dust emissions generated by the excavation. In the event significant dust is produced by the excavation or the stockpiles, excavation will be halted and the excavation area or stockpiles will be sprayed with water and/or covered with plastic, as appropriate.

The potential exposure of site workers and the public to chemical constituents present in the soil is through the inhalation of dust. According to Occupational Safety and Health Administration (OSHA), the permissible exposure limit (PEL) for workers (based on an 8-hour shift) is 5 milligrams per cubic meter (mg/m^3) for dust. To be more protective of public health and the environment, total dust emissions will be monitored and if found to exceed 1 mg/m^3, dust suppression measures (e.g., water spraying, covering of stockpiles) will be implemented.

As discussed above, air monitoring will be conducted upwind and downwind of the perimeter of the site. Assuming an average wind speed of 3.8 mph, a soil moisture content of 15 percent by weight, handling a maximum of 500 tons (1,000,000 pounds [lbs]) of soil per day, and no dust suppression measures, the project is expected to generate approximately 15 lbs per day of PM_{10} emissions due to soil handling operations. The SCAQMD considers a project to have a significant impact on air quality if the projected dust emissions are greater than 150 lbs per day. The SCAQMD CEQA Handbook, Table 9-9-G provides the following equation for calculating dust (PM_{10}) emissions from soil handling operations:

$$E = 0.00112 \times \{(G/5)^{1.3} / (H/2)^{1.4}\} \times I/J$$

where:
E = PM_{10} emissions from dirt piling or material handling operations
G = wind speed (average 3.8 mph)
H = soil moisture content (15 percent by weight, H = 0.15)
I = pounds of soil handled per day (1,000,000 lbs/day)
J = 2,000 (conversion from tons of soil to pounds of soil)

The project will also generate vehicle exhaust emissions, including carbon monoxide (CO), volatile organic compounds (VOCs), nitrogen oxides (NO_X), sulfur oxides (SO_X), and particulate matter with an aerodynamic diameter smaller than or equal to 10 microns (PM_{10}).

Approximately 8 additional vehicles will enter and leave NAVWPNSTA Seal Beach each day in support of this project. Earth moving equipment is expected to operate approximately 8 hours per day for 25 days. Approximately 2 truck trips per day will be required for hauling excavated materials off-site. The following is an estimate of the exhaust emissions associated with this temporary increase in vehicular traffic.

MAXIMUM EXHAUST EMISSIONS (lbs/day) *				
CO	VOC	NO_X	SO_X	PM_{10}
13.22	1.80	29.26	2.56	2.08

* The emissions have been estimated using the worst-case assumption that all equipment operates simultaneously for the life of the project.

These temporary emissions are below SCAQMD thresholds of 550 lbs/day CO, 55 lbs/day VOC, 55 lbs/day NO_X, 150 lbs/day SO_X, and 150 lbs/day PM_{10}.

Chemical constituents present in the soil and dust are not potential ozone-depleting gases or potential heat-regenerative gases. The project is not in a confined space so any dust generated by the project will disperse and will not displace oxygen to any level of significance. If the dust concentration was to reach the maximum allowable concentration of 1 mg/m^3, the concentration of contaminants would be well below the OSHA standard (5 mg/m^3).

The size and nature of the project is too small to alter air movement, moisture, temperature or result in any changes in climate, either locally or regionally. The short duration of the project and the low level of contaminants emitted to the air will prevent any degradation of any air resources which would individually or cumulatively result in a loss of biological diversity among the plants and animals residing in that air.

Therefore the project will not:

a. Conflict with or obstruct implementation of the applicable air quality plan.

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

c. Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

d. Expose sensitive receptors to substantial pollutant concentrations.

e. Create objectionable odors affecting a substantial number of people.

In addition, the following are addressed to meet the requirements set forth under Section 711.4, Fish and Game Code and 753.5, Title 14, Code of California Regulations relating to filing of environmental fees:

- Degradation of any air resources, which will individually or cumulatively result in a loss of biological diversity among the plants and animals residing in that air.

References: 1, 4, 5 and 6

Findings of Significance:

- ☐ Potentially Significant Impact
- ☐ Potentially Significant Unless Mitigated
- ☒ Less Than Significant Impact
- ☐ No Impact

4. Biological Resources

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

IR Site 73 is a predominately flat, grassy area landscaped with some scattered trees and shrubs. Beyond the boundary of the site are developed areas of NAVWPNSTA Seal Beach, including the National Wildlife Refuge, a major biological resource, which encompasses 900 acres of NAVWPNSTA Seal Beach. Terrestrial ecological receptors, such as ground squirrels and rabbits, have been observed at IR Site 73. In addition, the mourning dove, California ground squirrel, and American kestrel are all commonly observed on maintained grassy areas near NAVWPNSTA Seal Beach.

Based on the ecological risk screening, it was concluded the PAHs do not contribute to the risk to

ecological receptors. However, significant risk to terrestrial receptors exists from metals in soil. Nine metals (arsenic, cadmium, copper, lead, manganese, mercury, nickel, selenium, and zinc) identified at the site were described as presenting potentially unacceptable ecological risk. Lead was considered the primary concern. The ecological risk assessment identified several PRGs for lead as a screening benchmark for plants, wildlife soil invertebrates, and soil microbes. The risk assessment recommended the PRG of 317 mg/kg based on a screening benchmark value for the American robin, as the cleanup goal for the site. Wildlife receptors of potential concern were identified as mourning dove, California ground squirrel, American Kestrel, American raccoon, and the red fox.

Because of the distance of IR Site 73 to the nearest surface water body and the depth to the groundwater table, exposure to aquatic receptors is not considered at this site.

References: 1, 4 and 7

Analysis of Potential Impacts:

The purpose of this project is to remove soils contaminated with metals that may be hazardous to wildlife and humans. Therefore long term impacts to the environment from the project will be beneficial.

The project may result in the removal of a few native plants that are present in the grass/shrub area, however, the area will be revegetated with sod and any native plants are expected to re-establish in the area after the removal action is complete. No riparian or sensitive habitat including wetlands, marshes, or any water bodies, exist on the site. No protected, endangered or threatened plant species under special management requirements have been identified at the site.

Because the site has scattered vegetation it does not offer adequate cover, nesting or foraging opportunities for small animals identified in the surrounding area. Impacts to animals are expected to be minimal because the project site covers a small portion of a large open space area and the duration of the project is only 6 months. Any small animals are expected to leave the site due to noise and excavation activities.

A review of the California Fish and Game Rarefind database in July of 2002 did not identify any protected, endangered or threatened plant and animal species.

Therefore the project will <u>not</u>:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

e. Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

e. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

In addition, the following are addressed to meet the requirements set forth under Section 711.4, Fish and Game Code and 753.5, Title 14, Code of California Regulations relating to filing of environmental fees:

Plants:

- Changes to any riparian land or wetlands under state or federal jurisdiction.
- Changes to soil required to sustain habitat for fish and wildlife.
- Any adverse effect to native and non-native plant life.
- Effects to rare and unique plant life and ecological communities dependent on plant life.
- Any adverse effect to listed threatened and endangered plants.
- Effects on habitat in which listed threatened and endangered plants are believed to reside.
- Effects on species of plants listed as protected or identified for special management in the Fish and Game Code, the Public Resources Code, the Water Code, or regulations adopted there under.
- Effects on marine and terrestrial plant species subject to the jurisdiction of the Department of Fish and Game and ecological communities in which they reside.

Animals:

- Effects on listed threatened or endangered animals.
- Effects on habitat in which listed threatened or endangered animals are believed to reside.
- Effects on species of animals listed as protected or identified for special management in the Fish and Game Code, the Public Resources Code, the Water Code, or regulations adopted there under.
- Effects on marine and terrestrial animal species subject to the jurisdiction of the Department of Fish and Game and the ecological communities in which they reside.

References: 1 and 4

Findings of Significance:

- ☐ Potentially Significant Impact
- ☐ Potentially Significant Unless Mitigated
- ☐ Less Than Significant Impact
- ■ No Impact

5. Cultural Resources

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

IR Site 73 falls within the boundaries of a known prehistoric archeological site, CA-ORA-322/1118. A determination was made that the site is eligible for inclusion in the National Register of Historic Places (Ref 2). The California State Historic Preservation Office concurred with this conclusion in 1999 (Ref 11). Accordingly, the substantive portions of the National Historic Preservation Act (NHPA) have been identified as potentially applicable.

Previous studies have estimated that CA-ORA-322/1118 was occupied 4,000 years ago. A great deal of intrasite variability was observed from samples, though they were not large enough to determine whether the variability stemmed from different activities within a single occupation or separate occupations over a long period of time. When sampling was conducted within IR Site 73, shell (probably from a midden deposit) was noted in several auger sites. The bulk of shell observed within IR Site 73 is pectin and chione, though other species were occasionally noted.

Recent studies, conducted by the DON within the NAVWPNSTA Administration Area (Clevenger and Crawford, 1995; 1997) have determined that Archaeological Sites CA-Ora-322 and -1118 are parts of a single site. A systematic program of shovel testing and test excavations, conducted to determine the content and vertical and horizontal extent of the site, recovered debitage; fish, bird, and mammal bone; large amounts of shell, modified shell; shell beads; groundstone; bifacially worked stone tools; ochre; fire-affected rock; and historic debris. Five radiocarbon dates on marine shell provided an age range of between 2440 B.C. and A.D. 530. Hydration analysis of Coso obsidian produced estimated dates of 1640 B.C. to A.D. 700, which corroborates the radiocarbon dates in placing occupation of the site in the late Millingstone and Intermediate periods.

The excavators identified four areas with distinct stratigraphic sequences, identified as the Upper Northwest, Upper Southwest, Lower Southeast, and Lower Northeast stratigraphic areas. IRP Site 73 includes parts of the Upper Northwest and Upper Southwest stratigraphic areas.

The Upper Northwest area, which extends along Seal Beach Boulevard east of Building 206, contains four distinct strata, including a thin veneer of fill and three natural layers. The uppermost layer, Soil 1, is a sand loam 22 to 30 centimeters thick with high organic content. Soil 2 is described as a brown silt loam, and Soil 3 is described as a yellow-brown silty sand with caliche. Midden is concentrated in Soil 1 and declines with depth. Its distribution was patchy and densities of shell and other artifacts varied considerably from test to test.

The Upper Southeast area occupies the knoll that extends southwest from the water tower into the town of Seal Beach. Shell and artifacts formed a dense concentration in this area, in Soil 1. Soil 1 ranges from as little as 4 centimeters thick along the southern edge of the site, where it has been truncated by disturbance, to 60 centimeters along the edge of the knoll. Soil 1 was underlain in most units by Soil 2, beneath which was Soil 5, a clayey subsoil. Again, midden is concentrated in Soil 1 and drops off markedly in Soil 2. In all cases, midden is most dense in the upper 30 to 35 centimeters of the sequence.

References: 2, 11 and 12

Analysis of Potential Impacts:

IR Site 73 falls within a known archaeological site (CA-ORA-322/1,118). Excavation activities will begin with data recovery as the first step. Though under federal regulations this type of action is considered to have a potentially adverse affect to the archeological site, data recovery and monitoring during excavation are considered standard and acceptable controls for the potential impact to the archeological site. A data recovery plan has been developed to perform the fieldwork (as described in the project description of this Initial Study), and a final data report will be issued containing the information obtained during the data recovery and the monitoring effort. The data recovery excavation will be performed using manual methods by an archaeologist which meets the federal professional standards with a Native American monitor present. Following data recovery, mechanical excavation will be conducted under the surveillance of an archaeological monitor and Native American monitor. The inclusion of data recovery will help contribute to the scientific understanding and enhance public appreciation and awareness of the cultural resources at the site.

At all times, there will be at least one staff member in the field who is capable of distinguishing human bones from remains of other vertebrates. The field staff will also keep at least one human osteology text available during all earth disturbing activities. If human remains are encountered, work in the excavation unit will immediately cease and the cultural resources officer for NAVWPNSTA Seal Beach will be contacted. That individual will call the county coroner and initiate NAGPRA procedures for disposition of inadvertent discoveries. Work will not resume until an agreement on removal and treatment of the remains has been reached.

Therefore the project will not:

a. Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5.

b. Cause a substantial adverse change in the significance of an archeological resource pursuant to 15064.5.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

d. Disturb any human remains, including those interred outside of formal cemeteries.

References: 4

Findings of Significance:

- ☐ Potentially Significant Impact
- ☐ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ☐ No Impact

6. Geology and Soils

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil

- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

NAVWPNSTA Seal Beach is bordered to the southwest by Anaheim Bay and to the north, east, and west by highly developed urban communities. Most of NAVWPNSTA Seal Beach lies on relatively flat alluvial deposits that slope evenly from approximately 20 feet above sea level in the northeastern part of the facility, to sea level in the tidal salt marsh of the Seal Beach National Wildlife Refuge (NWR) in the southwest. The most pronounced topographic feature on NAVWPNSTA Seal Beach is part of Landing Hill on the southwest side of the facility. Landing Hill is an uplifted area along the Newport-Inglewood Fault Zone that covers an area extending west of NAVWPNSTA Seal Beach across Seal Beach Boulevard. Landing Hill reaches a maximum elevation of about 50 feet above sea level on the facility. Many of the administrative buildings and Navy family housing units within NAVWPNSTA Seal Beach are located on Landing Hill.

NAVWPNSTA Seal Beach is located adjacent to the Pacific Ocean at the seaward edge of the Orange County Coastal Plain at the northwest corner of Orange County, California. The northwest-trending Newport-Inglewood structural zone (NISZ) underlies the southwestern half of NAVWPNSTA Seal Beach. The NISZ consists of a complex set of faults and folds that extend from Newport Beach approximately 10 miles southeast of NAVWPNSTA Seal Beach to Beverly Hills at the base of the Santa Monica Mountains, approximately 30 miles northwest of the Station. Uplift along the NISZ has produced a line of low coastal hills and mesas near the southern end, including Landing Hill along the west edge of NAVWPNSTA Seal Beach. Adjacent to Landing Hill on the east is Sunset Gap, a wetlands comprising coastal salt marsh and tidal mud flats.

The investigation area around IR Site 73 is an approximate 6-acre rectangular area under and surrounding the station's administration water tower. It is predominantly flat, with a few mounded areas in the immediate vicinity of the water tower. The area is grass-covered and landscaped with scattered trees and shrubs. It is located east of Seal Beach Boulevard, south of the Main Gate, and west of Building 206 (Ref 1). The site falls within a known archaeological site. The archaeological significance of the site was reconfirmed in 1997 during an archaeological investigation (Ref 2). Since its construction around 1944, the water tower has been periodically sandblasted and repainted. Some of these sandblasting/repainting activities resulted in the release of sandblasted paint chips to the area surrounding the water tower (Ref 1).

NAVWPNSTA Seal Beach soils typically contain abundant clay and silt and are poorly drained. Six soil types (Alo clay, Beaches, Bolsa silt loam, Bolsa silt clay loam, Myford sandy loam, and tidal flats) have been identified at the station (Ref 3). The soil at IR Site 73 is primarily silty clay with a higher silt content observed at depth (Ref 1). Groundwater at IR Site 73 is expected to be approximately 15 feet or more below ground surface (bgs) (Ref 1).

References: 1, 2 and 3

Analysis of Potential Impacts:

Unstable earth conditions are not expected at this site during excavation activities. Following the archeological data recovery, soil will be excavated in lifts until all soils containing lead concentrations above the cleanup goal of 317 milligrams per kilogram (mg/kg) have been removed. Contaminated soil will be excavated to 1.5 feet bgs in most cases. Excavation will continue to a depth of approximately 3 feet bgs in areas where necessary. Excavations will be cut vertically. In the unlikely occurrence that the extent of lead-impacted soils requires an excavation deeper than 5 feet, the walls of the excavation will be sloped with a ratio of 1.5 feet horizontal to 1.0 foot vertical and will require notification to the California Occupational Safety and Health Administration (Cal/OSHA). All excavations will be conducted in

accordance with California Health and Safety Code, California Code of Regulations (CCR), Title 8, Sections 1539 through 1541, and Title 29, Code of Federal Regulation (CFR), Sections 1910 and 1926. Daily inspections of excavations by a competent person will also be performed to assess the stability of the slopes and excavated areas.

Although the aboveground portion of the water tower is scheduled for removal prior to implementation of this removal action, the footings would not be removed at that time. During implementation of the removal action, the top 1.5 to 3 feet of the water tower footings that lie within the areas to be excavated would be removed (using jackhammer or other appropriate methods) to match the depth of the excavation.

Following excavation, clean backfill will be used to restore the site to original grade, and the site will be revegetated with sod.

Therefore the project will not:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42)
- Strong seismic ground shaking
- Seismic-related ground failure, including liquefaction
- Landslides

b. Result in substantial soil erosion or the loss of topsoil.

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of water.

References: 4, 8 and 10

Findings of Significance:

- ☐ Potentially Significant Impact
- ☐ Potentially Significant Unless Mitigated
- ☒ Less Than Significant Impact
- ☐ No Impact

7. Hazards and Hazardous Materials

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

During the human-health risk screening, soil analytical data was compared with stationwide ULBVs and residential PRGs. The excess lifetime cancer risk (ELCR) and noncancer hazard quotient (HQ) for each chemical of potential concern (COPC) was less than estimated. The 95 percent UCL concentration of metals in soil at the site yielded an ECLR of 2×10^{-9} and a noncancer hazard index (HI) of 0.7. The ECLR associated with SVOCs in soil was 1×10^{-5}, primarily as a result of the PAH benzo(a)pyrene. The noncancer HI was less than 0.1 for SVOCs at IR Site 73.

NAVWPNSTA Seal Beach is a fenced installation and does not allow unescorted public access onto the Station. IR Site 73 is located on the Station on the edge of the northwest property boundary.

Analysis of Potential Impacts:

The project primarily involves the excavation, removal and disposal of approximately 400 cubic yards of lead-impacted soils. Dust emissions from soil excavation and handling operations will be controlled by water spraying and covering of stockpiles with plastic sheeting. If necessary the air upwind and downwind of the site will be monitored to ensure that PM_{10} emissions from fugitive dust remain within the limits prescribed by SCAQMD. As shown in Item 3 (Air) above, vehicle exhaust emissions of CO, VOC, NO_X, SO_X, and PM_{10} will not exceed SCAQMD limits.

The potential for exposure to lead-impacted soils during the removal action poses the greatest risk to onsite workers. The use of experienced personnel trained in hazardous materials handling and removal, conducting the work in accordance with approved methods and procedures, as prescribed in the Removal Action Work Plan and Health and Safety Plan, will greatly reduce this risk.

The excavated soil will be classified for proper disposal based on stockpile sampling. All vehicles used by the project will be insured for liability and they will be operated by appropriately licensed operators in accordance with state law. Trucks used to transport inert materials to an offsite recycling/disposal facility will comply with all applicable state laws for transporters.

The soil is stable and not expected to ignite or cause an explosion. Adequate measures will be employed to prevent fugitive dust from being transported into nearby residential areas. As described in Item 6 (Geology and Soil) above, excavations will be sloped where necessary to prevent collapse and/or cave-in.

Prior to commencement of intrusive activities, station utility maps will be reviewed and a geophysical utility survey will be conducted to locate buried utilities. Active utilities present within the area to be excavated will be evaluated to determine if the utility should be left in place, temporarily or permanently rerouted around the site, or decommissioned and removed. Manual methods of excavation will be employed in the vicinity of active utilities to be left in place.

Although excavation, backfilling and revegetation of IR Site 73 will temporarily disrupt the local

environment, the site will be restored to its original state in a relatively short period of time.

Public exposure to noise levels during the removal activity will not disrupt activities that are part of the daily human condition. Onsite workers will participate in a hearing conservation and protection program.

The project will not have a significant impact on the public health and safety from exposure to noise, fugitive dust or vehicle exhaust emissions, all of which are at or below federal and state guidelines.

Sensitive receptors near the site include J.H. McGaugh Elementary school which is located 1,500 feet west of Site 73 and the area approximately 200 feet south is used for military housing (not family). Exposure to these sensitive receptors will be minimal because of the implementation of dust suppression measures, covering stockpiled soil with plastic, and also tarping or limiting the load height of the trucks that transport the soil. Site 73 is not located on a site, which is included on a list of hazardous materials site compiled pursuant to Government Code Section 65962.5 and it would not create a significant hazard to the public or the environment.

Therefore the project will not:

a. Create a significant hazard to the public or the environment throughout the routine transport, use or disposal of hazardous materials.

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to public or the environment.

e. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

References: 4

Findings of Significance:

- ☐ Potentially Significant Impact
- ☐ Potentially Significant Unless Mitigated
- ☒ Less Than Significant Impact
- ☐ No Impact

8. Hydrology and Water Quality

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

The depth to groundwater at IR Site 73 is expected to be approximately 15 feet or more bgs (Ref 1). Drainage from NAVWPNSTA Seal Beach flows predominantly to Anaheim Bay with minor amounts discharged into the Bolsa Chica Flood Control Channel. Raised roadbeds serve as barriers to control tidal flooding at the facility. There are no watercourses or wetlands located within the boundaries of IR Site 73.

References: 1 and 4

Analysis of Potential Impacts:

Lead-impacted soils were reported within the upper three feet of soil and groundwater is expected to be approximately 15 feet bgs. Excavation of the lead-impacted soils at IR Site 73 will result in the removal of low levels of metals that could leach to groundwater underlying the site. Excavated soil will be stockpiled on and covered with plastic (minimum 20 –millimeter thickness) until it is classified and removed for disposal.

The project will not result in degradation of surface or groundwater quality, or depletion/ degradation of groundwater supplies. The excavation area will be backfilled with clean fill material, compacted to original grade and revegetated with sod. The project will not alter the course or flow of floodwaters, or the direction or rate of flow of groundwater.

Therefore the project will <u>not</u>:

a. Violate any water quality standards or waste discharge requirements.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficient in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site.

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site.

e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

f. Otherwise substantially degrade water quality.

g. Place within a 100-flood hazard area structures, which would impede or redirect flood flows.

h. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

I. Inundation by sieche, tsunami or mudflow.

In addition, the following are addressed to meet the requirements set forth under Section 711.4, Fish and Game Code and 753.5, Title 14, Code of California Regulations relating to filing of environmental fees:

- Changes to riparian land, rivers, streams, watercourses and wetlands under state and federal jurisdiction.

- Changes to any water resources, which will individually or cumulatively result in a loss of biological diversity among the plants and animals residing in that water.

References: 4

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ☎ No Impact

9. Land Use and Planning

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

IR Site 73 is the area under and surrounding the water tower. Building 206, which is located to the east of the site, was formally used as office space and is currently vacated and pending demolition. The site is currently covered with grass and landscaped with some scattered trees and shrubs. In the past, the water tower was periodically sandblasted and painted. Demolition of the water tower, with the exception of the footings, is planned prior to the initiation of the removal action. Activities planned as part of the removal action include removal of the lead-impacted soils and water tower footings down to the depth of the excavation, backfilling of the excavation and revegetation of the area.

Approximately 1,500 feet west of IR Site 73 is the J. H. McGaugh Elementary School, located on the west side of Seal Beach Boulevard between Bolsa Avenue and Marlin Avenue. The area approximately 200 feet south of IR Site 73 is used for officers housing.

References: 1 and 4

Analysis of Potential Impacts:

The project will not result in changes to the existing zoning, nor require deed restrictions or institutional controls. Following implementation of the proposed activity, land use at the site is not expected to change.

Therefore the project will not:

a. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

b. Conflict with any applicable habitat conservation plan or natural community conservation plan.

References: 4

Findings of Significance:

- ☐ Potentially Significant Impact
- ☐ Potentially Significant Unless Mitigated
- ☐ Less Than Significant Impact
- ☒ No Impact

10. Mineral Resources

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

The only natural resources the project activities will consume is the fuel needed to operate the excavation equipment and vehicles (trucks) that will be used to haul lead-impacted soils from the site. Fuel consumed by project equipment and vehicles consists primarily of diesel fuel (a petroleum product derived from the refining [distillation] of crude oil). Approximately 700 to 1,400 gallons of diesel fuel would be required for onsite excavation operations, and approximately 500 to 1,000 gallons of diesel fuel would be required for off-site transportation.

Analysis of Potential Impacts:

The potential for recovering natural resources, such as natural gas, crude oil, or minerals, does not exist at the site. The only natural resources that will be consumed by the project will be approximately 1,200 to 2,400 gallons of diesel fuel. The project will not increase the rate of use, nor contribute to depletion of any natural resources in any substantial way.

Therefore the project will not:

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

References:

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ■ No Impact

11. Noise

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

The closest occupied area is the officers housing, approximately 200 feet south of the site. Approximately 1,500 feet southwest of IR Site 73 is the J. H. McGaugh Elementary School, located on the west side of Seal Beach Boulevard between Bolsa Avenue and Marlin Avenue.

References: 4, 8, 9 and 10

Analysis of Potential Impacts:

Construction equipment will include a diesel driven backhoe or an excavator, a front-end loader, and dump trucks. Excavation, stockpiling, loading and transport activities are expected to last approximately one month. The noisiest part of the project will involve the earthwork (clearing the site and excavating). The measured noise level for this type of work is typically in the range of 100 to 105 decibels (dB) at a distance of 1 meter from the noise source. Cal/OSHA regulations, Title 8, California Code of Regulations (CCR), Section 5096, limits workers exposed to 85 dB to an 8-hour work period. U. S. Environmental Protection Agency (USEPA) has identified a level of 55 dB as adequate to protect outdoor activities against interference and annoyance due to noise. This level will permit spoken conversation and other activities such as sleeping, working and recreation, which are part of the daily human condition.

The construction phase of the project will increase the ambient noise levels on and immediately adjacent to the site.

The expected noise level or sound pressure level (SPL) at a given distance from a noise source can be approximated using the following equation:

$$SPL_{final} = SPL_{initial} - 20 \log (\text{final distance/initial distance})$$

At the officers housing located approximately 200 feet south of the site, maximum noise levels are estimated to be approximately 70 dB, which exceeds the USEPA guideline for preventing activity interference and annoyance outdoors.

Noise monitoring will be conducted at IR Site 73 during construction activities. Workers will be required to

wear hearing protection when noise levels from operating equipment exceed 85 dB. All personnel exposed to noise greater than 85 dB will be enrolled in a hearing conservation program. Noise levels in the vicinity of the officers housing located south of the site will be monitored, and if necessary temporary sound barriers or other measures will be employed to reduce noise levels below USEPA guidelines.

Therefore the project will not:

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b. Exposure of persons to or generation of excessive groundbourne vibration or groundbourne noise levels.

c. A substantial permanent increase in ambient noise levels in the vicinity above levels existing without the project.

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

References: 4, 8 and 9

Findings of Significance:

- ☐ Potentially Significant Impact
- ☐ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ☐ No Impact

12. Population and Housing

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

The site is located within 200 feet of the officers housing for NAWPWPNSTA Seal Beach and 1,500 feet for the J. H. McGaugh Elementary School. The Station work force and associated housing is governed by the defense mission assigned to the Station by DoD.

References: 1 and 4

Analysis of Potential Impacts:

The project will have no impact on the population and housing activities of the surrounding area. The population of NAVWPNSTA Seal Beach is determined by the staffing needs of the defense missions assigned to the Station. The project will not alter the location, distribution, density or growth rate of the human population, nor affect existing housing, nor create a demand for additional housing.

Therefore the project will not:

a. Induce substantial population growth in area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

References: 1 and 4

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ☒ No Impact

13. Public Services

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

The need for public services is dependent on the local population. The work force at NAVWPNSTA Seal Beach, and hence the population in the surrounding areas, is dependent on the strategic policies of the Department of Defense (DoD), the defense missions assigned to military bases, and the level of staffing needed to carry out the missions assigned to a particular base. The public services surrounding NAVWPNSTA Seal Beach include: J. H. McGaugh Elementary School, Long Beach Community Hospital, Los Alamitos Medical Center, Seal Beach Police Station, and Seal Beach Fire Department.
References: 7

Analysis of Potential Impacts:

Since the project will not increase the permanent work force at NAVWPNSTA Seal Beach, or affect the population in the surrounding area, public services such as fire and police protection, schools, roads, hospitals and other medical facilities will not be impacted. The number of project personnel involved in the project may range from 8 to 12 persons during the field activities for a period of approximately 1.5 months. Since the project field activities will last for a relatively short duration and will involve a small number of personnel, the impacts on public services will be insignificant.

Therefore the project will not:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

- Fire protection
- Police protection
- Schools
- Parks
- Other public facilities

References:

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ■ No Impact

14. Recreation

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

The project is located on a military base and is not available for recreational activities.

Analysis of Potential Impacts:

The project will not impact the quality or quantity of existing recreational opportunities in the surrounding areas.

Therefore the project will not:

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

b. Include recreational facilities or require construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

References:

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ■ No Impact

15. Transportation and Traffic

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

The majority of vehicular traffic entering and exiting NAVWPNSTA Seal Beach is from Westminster Boulevard through Gate 9 (Contractor's Gate). This gate is controlled by a traffic signal. Approximately 500 vehicles per day enter and exit the Station through Gate 9. Westminster Boulevard is a four-lane east-west thoroughfare that divides the Station into northern and southern sections. It intersects Seal Beach Boulevard, which is a six-lane north-south thoroughfare that defines the western boundary of the Station, and provides access to and from Interstate Highway 405 (San Diego Freeway) to the north.

Construction personnel and equipment required for the project will enter and exit the Station through Gate 9. IR Site 73 is located east of Seal Beach Boulevard, south of Forrestal Avenue, and west of Hussey Road and Building 206, approximately 1.2 miles southeast of Gate 9. Access to the site from Gate 9 is along Kitts Highway, Forrestal Avenue and Hussey Road. Pedestrian traffic on these streets is negligible. The posted speed limit is 40 mph on Kitts Highway and 25 mph on Forrestal Avenue and Hussey Road. There are no other traffic restrictions on these roadways.

References: 7

Analysis of Potential Impacts:

Trucks hauling contaminated waste material for off-site disposal will use Gate 9 located on Westminster Avenue to exit the NAVWPNSTA. The trucks will travel east on Westminster Avenue to Bolsa Chica Road, then go north on Bolsa Chica Road to enter Interstate 405. Trucks hauling contaminated waste material for off-site disposal will not be allowed to travel on Seal Beach Boulevard.

Assuming a 10-day transportation period, the total truckloads per day are expected to be approximately 2. The truckloads for bringing burrow to the site are expected to be approximately 2 per day. However, both activities will have separate timelines. Therefore, the impact will not be cumulative. Vehicular traffic to and from NAVWPNSTA Seal Beach Gate 9 is estimated to increase by 3 percent for 10 days. Therefore, the increase

in flow of traffic on and off the NAVWPNSTA Seal Beach is not expected to be significant. No impact is anticipated on the vehicular and pedestrian traffic patterns on Forrestal Avenue, and Kitts Highway.

Therefore the project will not:

a. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

b. Exceed, either individually or cumulatively, a level of service standard established by the country congestion management agency for designated roads or highway.

c. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

d. Result in inadequate emergency access.

e. Result in inadequate parking capacity.

f. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

References:

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ■ No Impact

16. Utilities and Service Systems

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

NAVWPNSTA Seal Beach has an existing water supply system and electrical power.

Analysis of Potential Impacts:

Utilities for the project will include electricity, potable water, and telephone services, all of which are currently available at NAVWPNSTA Seal Beach. The project does not anticipate the need to utilize the sanitary/industrial sewers or storm drainage systems.

During the construction phase of the project, the main demand for energy will be from excavation

equipment and vehicles (trucks). As discussed in Item 10 (Mineral Resources) above, this demand will be satisfied by diesel fuel. Electrical power requirements for an on-site construction trailer will be provided by Southern California Edison (SCE) through the existing power supply system that provides electrical power to NAVWPNSTA Seal Beach.

Prior to commencement of intrusive activities, station utility maps will be reviewed and a geophysical utility survey will be conducted to locate buried utilities. Active utilities present within the area to be excavated will be evaluated to determine if the utility should be left in place, temporarily or permanently rerouted around the site, or decommissioned and removed. (Note: there are sprinkler lines evident at IR Site 73). Manual methods of excavation will be employed in the vicinity of active utilities to be left in place.

The construction phase of the project does not involve, address, nor result in the need for substantial amounts of energy. The project will only involve short duration field activities. This will be the only period during which energy will be consumed. No power shut downs are anticipated in the nearby buildings as a result of project activities. If necessary, a field construction trailer will be mobilized near the site to serve as a field office. Power to the trailer will be provided from the existing Station electrical distribution system. All vehicles will run on diesel fuel.

The existing Station water supply will be adequate to provide the water needs of the project, which are estimated to be approximately 1,000 to 2,000 gallons. The project is not expected to impact the sanitary/industrial sewers or storm drainage systems. Review of existing underground utility maps, performing a geophysical utility survey, and manually excavating in the vicinity of active utilities will prevent the inadvertent disruption of utility services and adequately protect the health and safety of workers in and around the site.

Therefore the project will not:

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

e. Result in determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments.

f. Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs.

g. Comply with federal, state, and local statutes and regulations related to solid waste.

References:

Findings of Significance:

❑ Potentially Significant Impact

- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ■ No Impact

17. Cumulative Effects

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Description of Environmental Setting:

The IR Program is the DoD program for conducting environmental investigations and remediation of sites contaminated by the release of hazardous substances in accordance with CERCLA. Since 1994, the Navy has completed five removal actions at NAVWPNSTA Seal Beach, one at each of the following IR Sites: Site 1 (Waste Settling Pond), Site 8 (Battery Shop Drainage), Site 9 (Sandblast Grit Disposal), Site 19 (Building 241 Disposal Pit), and Site 20 (Building 68 Mercury Spill). A removal action is currently occurring at IR Site 5 (Clean Fill Disposal Area) and a removal action is planned at IR Site 7 (Station Landfill). In addition to IR Site 73 (Water Tower Area), a removal action is planned at SWMU 24 (Stationary Demilitarization Furnace Facility).

References: 7

Analysis of Potential Impacts:

This project will be accomplished with conventional technologies such as backhoes and dump trucks. As such, it will have no impact on the need for development of new technologies.

This project is not part of a larger project nor will it lead to a series of projects. However, environmental investigations and removal actions will be conducted at other NAVWPNSTA Seal Beach sites under the IR Program in the future. The IR Program is designed to provide a framework for investigating and cleaning up contaminated sites at NAVWPNSTA Seal Beach. The other removal actions are not planned concurrently with the IR Site 73 removal action. This will eliminate the cumulative impacts on noise, air, and traffic, and avoid cumulative impacts on public services, utilities, and energy.

Therefore the project will <u>not</u>:

a. Increase the need for developing new technologies, especially for managing any hazardous or non-hazardous wastes that the project generates.

b. Increase the need for developing new technologies for any other aspects of the projects.

c. Leads to a larger project or leads to a series of projects, or is a step to additional projects. Examples of DTSC projects include Interim Corrective Measures and Removal Actions that are not final remedies for a site or facility.

d. Alters the location, distribution, density or growth rate of the human population of an area.

e. Affect existing housing, public services, public infrastructure, or creates demands for additional housing.

f. Be cumulatively considerable on the environments with cumulative adverse effects on air, water, habitats, natural resources, etc.

References:

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ❑ No Impact

18. Mandatory Findings of Significance

Project activities likely to create an impact:

- Excavate Lead-Impacted Soil
- Remove Lead-Impacted Soil
- Dispose of Lead-Impacted Soil

Therefore the project will not:

a. Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

The Cultural Resources Section and Biological Resources Section of this Initial Study supports the determination.

b. Have impacts that are individually limited but cumulatively considerable. As used in the subsection, "cumulatively considerable".

The Cumulative Effects Section of this Initial Study supports this determination.

["Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects]

c. Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

The Hazards and Hazardous Materials Section and the Population and Housing Section of this Initial Study supports this Determination.

References:

Findings of Significance:

- ☐ Potentially Significant Impact
- ☐ Potentially Significant Unless Mitigated
- ☒ Less Than Significant Impact
- ☐ No Impact

V. DETERMINATION OF DE MINIMIS IMPACT FINDING

On the basis of this Special Initial Study:

☒ I find that there is no evidence before the Department of Toxic Substances Control that the proposed project will have a potential for an adverse effect on wildlife resources or the habitat upon which the wildlife depend. A Negative Declaration with a De Minimis Impact Finding will be prepared.

VI. DETERMINATION OF APPROPRIATE ENVIRONMENTAL DOCUMENT

On the basis of this Special Initial Study:

☒ I find that the proposed project COULD NOT have a significant effect on the environment. A NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project COULD HAVE a significant effect on the environment, mitigation measures have been added to the project, which would reduce these effects to less than significant levels. A NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project COULD HAVE a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT will be prepared.

Leibel	HSS	714- 484-5446	10/11/02
DTSC Project Manager Signature	**Title**	**Telephone #**	**Date**
	Br. Chief	(714) 484-5456	10/11/02
DTSC Branch/ Unit Chief Signature	**Title**	**Telephone #**	**Date**

ATTACHMENT A

SPECIAL
INITIAL STUDY
REFERENCE LIST
for
Action Memorandum/Removal Action Work Plan (AM/RAW)
for a Non-Time Critical Removal Action at
Installation Restoration (IR) Site 73 – Water Tower Area
Naval Weapons Station Seal Beach
Seal Beach, Orange County, California

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1. CH2M Hill. 2000. Draft Focused Site Inspection Phase II Report, Naval Weapons Station, Seal Beach, California. Volumes 1 and 2. 18 December.

2. Ogden Environmental and Energy Services Co., Inc. 1997. Historic Properties Overview and Evaluations on the Naval Weapons Station, Seal Beach. Prepared for SWDIV. March.

3. Soil Conservation Service. 1978. Soil Survey of Orange County and Western Part of Riverside County, California. U.S. Department of Agriculture.

4. Bechtel National, Inc. 2001. Engineering Evaluation/Cost Analysis, Non-Time-Critical Removal Action for Installation Restoration Site 73, Naval Weapons Station Seal Beach, Seal Beach, Orange County, California.

5. National Institute for Occupational Safety and Health (NIOSH). 1997. Pocket Guide to Chemical Hazards. June.

6. SCAQMD CEQA Handbook, Table 9-9-G

7. Bechtel National, Inc. (BNI). 2001. Final Engineering Evaluation/Cost Analysis, Non-Time Critical Removal Action for Installation Restoration Site 5, Naval Weapons Station Seal Beach, Seal Beach, Orange County, California. August.

8. California Code of Regulations (CCR), Title 8

9. U. S. Environmental Protection Agency (USEPA), Office of Noise Abatement and Control. 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety. 550/9-74-004. March.

10. Occupational Safety and Health Administration (OSHA) Regulations, 29 CFR

11. Abeyta, D. 1999. Letter from acting state historic preservation officer, State Historic Preservation Office, to D. Baille, Environmental Director, Department of the Navy re: Landscaping of Quarters A, Naval Weapons Station, Seal Beach, Orange County, California. 18 November.

12. Celvenger and Crawford, 1995; 1997

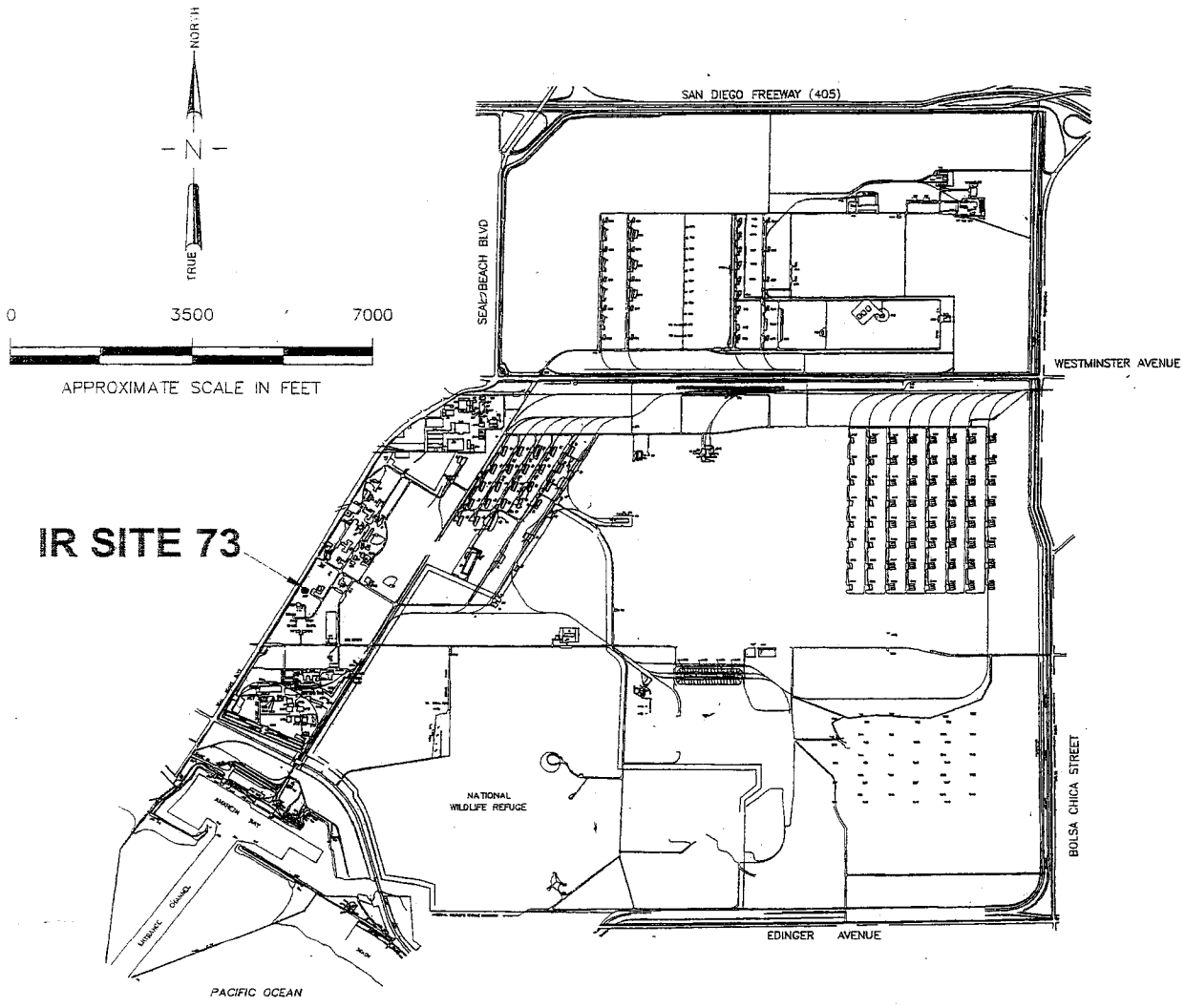

Figure 1
Site Location Map

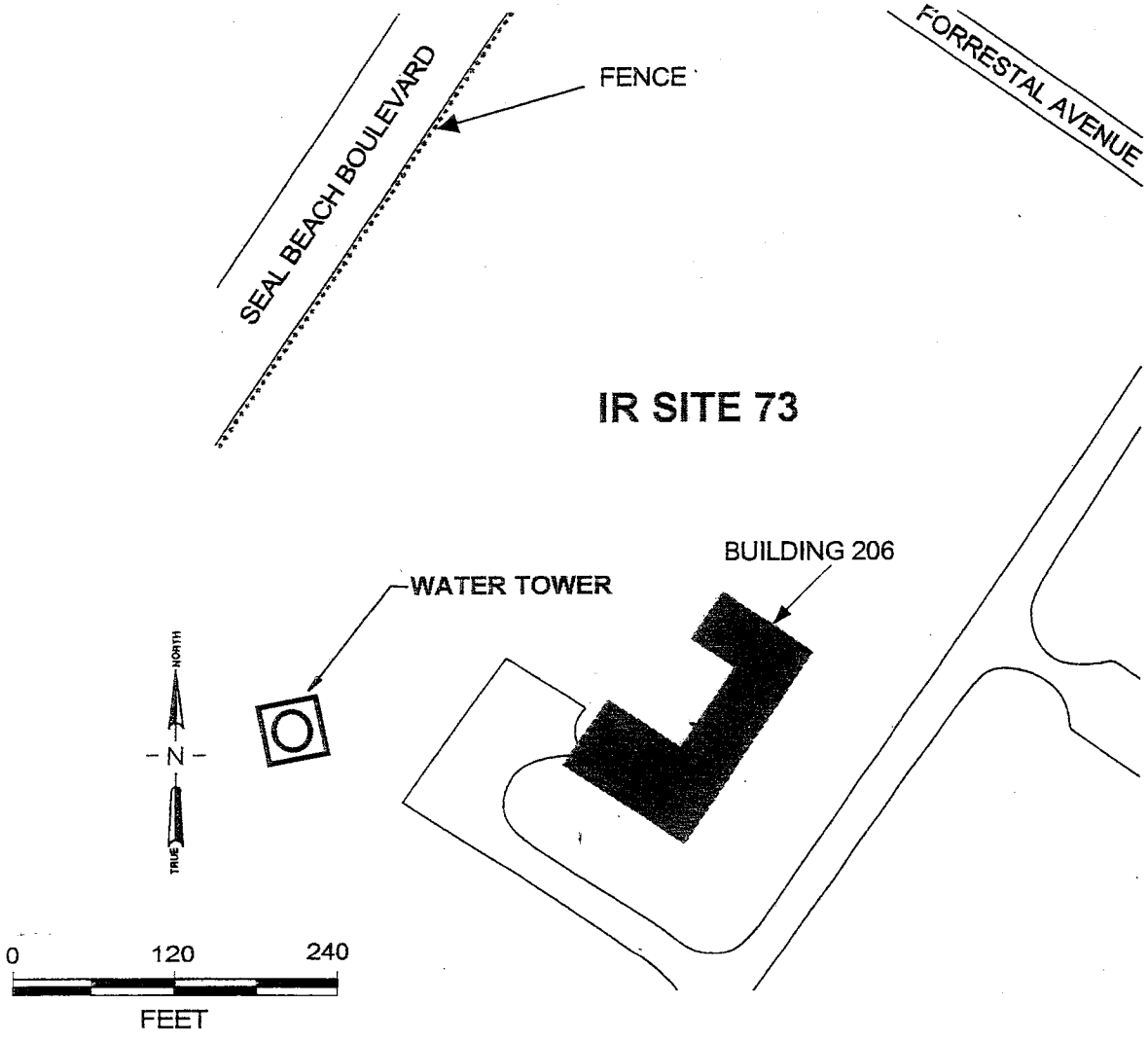

Figure 2
IR Site 73 Base Map